

CLAIMS

The embodiments of the invention in which an exclusive property or privilege is claimed are defined as follows:

1. An apparatus for aligning blocks in a procession that includes leading blocks and
5 trailing blocks comprising:

a frame;

a clamp mounted to said frame;

a clamp actuator coupled to said clamp and operable for movement of said clamp
to engage and stop the leading blocks; and

10 an alignment guide coupled to and moveable with at least one of the frame, the
clamp and the clamp actuator so that said alignment guide aligns trailing blocks when said clamp
engages and stops the leading blocks.

2. The apparatus of claim 1 comprising a linkage that couples said clamp to said
alignment guide.

15 3. The apparatus of claim 2 wherein said linkage includes a guide pin mounted to
said clamp and a guide arm mounted to said alignment guide.

4. The apparatus of claim 3 wherein said guide arm includes a journal in which the
guide pin is slidably disposed.

20 5. The apparatus of claim 4 wherein said journal includes first and second contact
ends and wherein said clamp is moveable by said actuator to an extending mode and a retracting
mode.

6. The apparatus of claim 5 wherein said guide pin contacts said first contact end in said extending mode whereby the alignment guide moves toward the procession simultaneously with said clamp.

7. The apparatus of claim 5 wherein said guide pin contacts said second contact end in said retracting mode whereby the alignment guide moves away from the procession simultaneously with said clamp.

8. An product alignment system comprising:

a first clamping plate operable between at least an open position and a clamping position wherein said first clamping plate clamps against a product in said clamping position; and

a first alignment guide movable with said first clamping plate, wherein said first alignment guide aligns product when said first clamping plate is in said clamping position.

9. The clamping guide of claim 8 wherein said first clamping plate and said first alignment guide are disposed along a conveyor that conveys a procession of the product.

10. The clamping guide of claim 9 comprising a second clamping plate disposed in opposing relation to the first clamping plate and a second alignment guide disposed in opposing relation to said first alignment guide along the conveyor.

11. The clamping guide of claim 9 comprising a wall member disposed on a side of the conveyor, opposite said first clamping guide and said first alignment guide.

12. The clamping guide of claim 9 wherein said first clamping plate includes edges, and wherein said first alignment guide prevents product from contacting said edges when said clamping plate is in said clamping position.

13. The clamping guide of claim 9 comprising a linkage that couples said first alignment guide to said first clamping plate so that the two are actuated together.

14. The clamping guide of claim 9 comprising a stabilizer arm coupled to said alignment guide to hold said alignment guide a pre-selected distance above the conveyor.

5 15. A block alignment system comprising:

at least one clamp;

at least one actuator to drive said clamp against and stop a procession of blocks;

and

at least one guide plate coupled to and actuatable with said clamp to align at least one block in said procession when said procession is stopped by said clamp.

16. A method of aligning blocks in a procession comprising:

conveying a procession of blocks on a conveyor;

closing a clamp against the procession to prevent the procession from moving;

closing an alignment guide against the procession to align blocks in the

15 procession wherein the clamp and the alignment guide are coupled together with a linkage so that the clamp and alignment guide close against the procession simultaneously.

17. The method of claim 16 comprising retracting the clamp away from the procession wherein the alignment guide retracts away from the procession with the clamp.

18. The method of claim 17 wherein said alignment guide lags behind the clamp in
20 said retracting so that the alignment guide is closer to the procession than the clamp when the clamp reaches a fully retracted position.

19. The method of claim 18 comprising de-powering the conveyor so that it no longer conveys the procession.

